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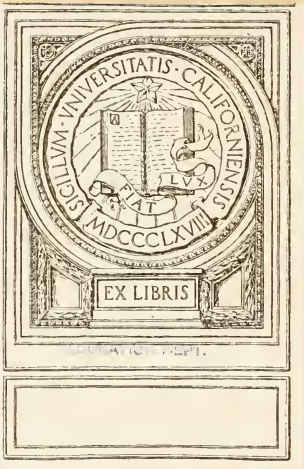
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A study of High School absences in relation to grades and mental ratings

By

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A STUDY OF ABSENCE IN RELATION TO GRADES AND MENTAL RATINGS.

INTRODUCTION

Attendance has always been considered essential to good school work. The relation of attendance to intelligence and to school grades is a very important problem. Now that we have both intelligence ratings and class grades it becomes possible to get an answer to this problem. When a student is absent either because of illness or laziness, the fact that he has missed his class exercises should seriously affect his class standing. He misses the instruction, inspiration, co-operation, explanations, assignments, drill, in fact, if the school should exist at all it would seem that it should be attended.

CORRELATION OF GRADES AND HEALTH

That there has been a close relationship between ill health and school grades has long been discussed.

It has not been satisfactorily proven that there is a very high correlation between grades of ill health, but it has been shown that ill health does effect the school work, especially the grades. This factor in attendance has not been the subject of much study in the High schools. The High School has been considered important because of its subject matter, therefore grades have probably been considered more important than attendance, health and other general factors. Since compulsory education laws are forcing more students into the High Schools, a study of attendance in secondary schools becomes more important.

CAUSES OF IRREGULAR ATTENDANCE.

Irregular attendance might be found due to numerous factors. The occupations and financial status of the student and his parents have considerable influence. If both parents are employed, quite naturally the home influence is not felt as keenly as when the mother finds no other duties outside the home. If the child is an orphan, with one parent employed, the same condition, except in very unusual cases, would exist. Ill health

on the part of either or both parents often necessitates frequent absence as well as ill health on the part of the pupil himself. Quite often home duties, because of parental employment or illness, necessitates the pupil remaining at home at irregular intervals with the consent of the parent. Then too, irregular attendance is found among pupils whose homes are not effected by financial needs, a distaste for school activities leads either to truancy or absence because of a very slight excuse. But essentially, absence is caused by actual ill health, owing to our stringent attendance laws if truancy officers co-operate with the school officials and parents of the students.

HEALTH AND ATTENDANCE.

W. C. Reeves of St. Louis, Missouri,[1] asserts that there "is a consistent relationship between physical defects and class standing, that the normal child excells those having physical defects, although the advantage in completed work is not as marked as that in class standing,

. . . . .

1. W. C. Reeves: Elementary School Journal, Vol. 15. The Relation between Physical Health Conditions of Children and their School Progress.

that children marked one in nutrition stand higher than those marked two. Physical defects, attendance and class standing are conducive to intermittant absence, which in the course of the school year is destructive to a higher percentage of attendance. The results of intermittant attendance may not be seen in the progress from grade to grade, yet they are evident in the standing of the individual in the class." This is demonstrated in Mr. Reeve's table in which 34.9% of the pupils in Class I have 95% in attendance, while in Class II they have 28.5% and in Class III, 16.3%. He groups the students absent 5% of the school period or less, and 7.8% of them are in group III, 8.2% in group II and 1% in group I.

Mr. Reeves states further that "these facts indicate a casual relationship between physical condition and attendance, and a high correlation between higher standing in class and a high percentage in attendance; . . . . that physical condition, attendance and home environment as a rule are related factors, that they seldom act as units on the work of children in school and because of this a correlation that would even approach mathematical accuracy would be difficult to establish,

as in most cases it would be impossible to isolate the difference in their bearing to school progress. However the study does not point out that correlation between any of the factors and character of work done in school is positive and as such merits the careful consideration of administrators, supervisors and teachers."

Mr. Reeves considered children of the first eight grades.

DIFFERENCE BETWEEN DEFECTIVE AND NORMAL CHILDREN.

Dr. Cornelle's investigations[2] determine that there is not much difference in the grades of defective children and normal. This would have some bearing upon attendance, as normal children are logically more regular in attendance than the sub-normal. The tables of Dr. Cornelle give the following results:

	Percentage in Studies.
Normal Children	75
Average Children	74
General Defectives	72.6
Adenoids and enlarged tonsils	72

. . . . . .

2. Cornelle. The Psychological Clinic, January 1908.

But in another study Connella found that the percent of defectives was higher among students not exempt from examinations than among those exempt.

Dr. Neumeyer of Philadelphia, in a similar study as quoted by L. P. Ayres[3] in his article considering children exempt and non-exempt from examination, found that the brighter children seemed to be afflicted about the same as those less bright, also that there is little difference between defective boys and girls. The study brings out the fact that "retarded and above age pupils have fewer defects than normal pupils". Age is an important factor, for with the exception of vision, defects tend to decrease with age. "The number of defectives among dull children does not differ from the number among bright children, but the dull child is found to be more defective in degree."

DEFECTS AND RETARDATION.

In a study in New Jersey by Superintendent J. E. Bryan of two thousand twenty children, found in the same

. . . . . .

3. Ayres, L. P. American Physical Education Review, Vol. 14. Physical Defects and School Progress.

article, that among the causes assigned for excessive age in the respective grades, 28.5% were due to absence. He determined that physical defects were a cause but not the cause of retardation and that the bearing of physical defects on school retardation does not seem very great. Nearly 20% of the mentally normal children have physical defects, while only 7% of those above normal are defective. And again the percentage of defective children in the lower grades is higher than in the upper grades.

Dr. Bryan states in his conclusion, "We have shown that physical defects decrease with age, that age is important and must be considered. Medical inspection can prevent misery and save lives, school doctors will make it easier and happier, but the royal road to learning cannot be found in the surgeon's knife. Old fashioned industry, application, intelligence and regularity will hold sway and reasons for poor scholarship are starting, absence, laziness, and stupidity."

ATTENDANCE AND SCHOLARSHIP.

We see that he uses absence as one of the contri-

tributory causes of poor scholarship. It seems to me the logical conclusion that such would be the case, although it might be more noticeable in the grades than in secondary schools. It is such occasional hints in various studies that suggests this study.

We find Meyer's[4] statement, "Perhaps most of the nervous breakdowns in school are among the children of mediocre ability. Such children, endowed with unusual industry are keenly sensitive to anxious parents and friends to the end that they feel they must rank high or among the best in their class. By undue expenditure of effort these children sometimes do attain high rank and even first place in their class. But it is at tremendous cost."

Thus it would seem that poor scholarship might be contributory to absence indirectly. The two are interwoven.

In a recent report of the Commissioner of Education, Washington, of the per cent of the school term not attended by the pupils of the United States, 25.4% of the school term was wasted. The lowest percentage

. . . . .

4. Meyers: Measuring Minds - Merson and Company.

was in Indiana, 7.1%, the highest 41.1% in Kentucky. California is recorded twenty seventh in the list with 28.5%.

S. C. Courtes[5] of Detroit in his article, says that in the average school system about forty per cent of the children make the same or lower scores at the end of the year and that only one child in five makes a reasonable gain.

DEFECTS AND PROGRESS.

Leonard Ayres,[6] associate director of the Department of Child Hygiene of the Russel Sage Foundation, says that the average number of grades completed by pupils during the whole time there was nine per cent less than those having no physical defects.

The following table taken from his article gives

. . . . .

5. S. C. Courtes: American Physical Education Review, Vol. 23. Measurement of Relation between Physical and Mental Growth.

6. Ayres, Leonard: American Physical Education Review, Vol. 15. Relation between Physical Defects and School Progress.

the number of years necessary for eight grades:

Kinds of Defects	Number of Years.
None	8
Vision	8
Teeth	8.5
Breathing	8.6
Tonsils	8.7
Adenoids	8.1
Inlarged glands.	9.2

One half of the children have defective teeth, one in seven defective breathing, one in four defective tonsils, one in eight adenoids and one half of them enlarged glands.

In another article on the relation of school and college to health, Dr. Ayers says "Our health is better than that of a generation ago, statistics show we are stronger, longer lived and larger than our forefathers. Even the college girl is larger, more rosey, less nervous than her seminary predecessor. The school must deal with the physical as well as the mental man."

As health bears a close relation to attendance, it is a most important factor to be considered.

It is obvious from the study of these cases that there is a lack of agreement. The relationships were established in the above instances in terms of grades in school work and attendance records. Now it would seem that the teacher often allows the attendance record to be a determining factor, especially if that record is poor and the student in good health. Truer discussion is derived from a comparison of the capacity of the student and his grades. This combination will possibly give a clear insight into the relationship. Now we not only have the students attendance record and his grades, but his actual intelligence rating found by standardized mental tests. There must be some relation between them and mental tests.

Do our schools of today deal with the physical as well as the mental man successfully? Is it possible to get this point of view and its relation to intelligence and the high school grades from the study of attendance?

SOURCE AND SELECTION OF DATA.

The data for this study was gathered from a Senior High School of seventeen hundred pupils, about fourteen hundred of whom had been given mental tests which were available at the time of the study. The tests that had been given and the results of which were available in the files were the Army Alpha, Form seven, the Oakland Edition Form A of the Otis and the Terman Test Form B. Of the cases studied one hundred seventeen were Terman, thirty seven Alpha and five were Otis tests, owing to the fact that it was not possible to select the three distinct types of students, superior, average and below average from one type of test. It seemed advisable to do this, for the correlation of the three tests runs fairly high. The study is more definitely defined by confining the cases strictly to the three groups and using the three tests, rather than have the types selected entirely from one test and merge gradually from one group to another. In a study W. S. Miller[7] finds the correlation between the Terman

. . . . . .

7. The Twenty-First Year Book of the National Society for the study of Education:-
Miller, W. S.: Administrative Use of Intelligence in the High Schools.

and Alpha scores to be .823, and between the Otis and Alpha to be .716. The correlation between the Otis and Terman is .741, so there is practically no error and the use of the above is as reliable as if the Terman Test only had been used in the study.

In a Junior High School study,[7] other tests correlated as follows: .851, .665, .587, indicating there is a close correlation between the majority of the tests, although the highest correlation was found between the National Scale A and the Centimeter Test, tests not used in this study.

METHOD OF PROCEDURE.

These one hundred fifty nine students thus selected were alphabetically arranged and the attendance record for the entire school for three years (being the longest period any one student had been in school) was examined in order to secure their respective records. The attendance records were kept in books, two for a period of four weeks, in which the name of each student was re-

. . . . . .

7. Trabue, M. R.: The Use of Intelligence Tests in the Junior High School.

corded with his attendance history for each period of the day. This system meant the survey of sixty such books, and the number of times absent, the distribution of absences, and the reasons where possible were carefully noted.

SCHOLARSHIP AVERAGE.

The scholarship record for each pupil for his entire period in high school was then secured from the Secretary's files. From this record his scholarship average was found. As the grades were indicated by a numerical system (i.e. 1, 2, 3, 4, 5,) the scholarship average was found by multiplying the number of ones by nine, twos by eight, threes by seven, fours by six and fives by zero. The resulting products were added together and divided by the number of grades recorded. Table one gives the complete process of securing the grade index.

TABLE I.

English (1a)	I	I	(1b) I	
Mathematics (2c)	I	II		
Language ($5b^3$)	I	I		9 x 11 = 99
		II		8 x 3 = 24
		I		14 ⋮ 123
		I		8.78
		I		
Domestic Science	I	II	II	

(1a) (2c) etcetera, represent University nomenclature only, as used on the record cards.

In English this particular student had three ones, in Mathematics a one and a two, in Domestic Science two ones and a two, in Language five ones and one two, making a total of eleven ones and three twos. The total number of ones was multiplied by nine and the total number of twos by eight. The sum of these products was one hundred twenty-three. This result was divided by fourteen, the total number of grades considered, giving a result of 8.78. The decimal point was moved one place to the right, giving a scholarship average of 87

in the terms of the intelligence quotient which is in the ratio of one hundred.[8]

CORRELATION OF I. Q. AND SCHOLARSHIP.

In taking the entire group and using the Pearson coefficient of Correlation, the intelligence quotient and scholarship grade for the entire group had a correlation of .557, table two.

TABLE I.

$$r = \frac{\text{sigma } (x\ y)}{n\ b^1\ b^2} = \frac{14,354.3, - 1,973.25}{(159)\left(\frac{72,439}{159 - 1}\right)\left(\sqrt{\frac{3,497.51}{159 - 1}}\right)}$$

$$\frac{12,381.05}{22,239.75} = +.557$$

This coefficient of correlation agrees with others found in recent studies. In a study by A. R. Trabue,[9] assistant professor of education, Teachers College, Columbia, is found the scholarship correlation between the

. . . .

8. The above method is one used by Professor J. P. Greithieser in the Compilation of the Thorndike College Entrance Tests at the University of California, published by the University of California Press, Berkeley, January 1923.

9. Twenty First Year Book.
Trabue, A.R. - Intelligence Testing in Junior High schools.

Otis test and scholarship to be .335 which is quite consistent with the above correlation. By way of comparison, the semester scores and scholarship follows low as .450.

In another study found in the same book, written by [illegible] Lee Gambull[10] of New Jersey State Normal, the correlation of .60 appears, between the Thorndike test score and the first semester of normal school work. In another study of the first semester marks of five hundred freshmen of Brown, Columbia and Rutger, Thorndike reports a correlation of .65.

In taking the data in groups of fifty three subjects in ascending order of intelligence quotients, no correlation between the intelligence quotient and grades was found. The lowest group gave a correlation of .12 plus, the median of minus .07 plus, and the highest of .14 plus, table three. This is probably due to the fact that such a small number of cases are used in each group.

. . . .

10. Twenty First Year Book.

Gambull, S. S.: - Administrative Use of Intelligence Tests.

TABLE III.

Correlation of I. Q. and Average Grade.

(In groups of 53, ascending order of I.Q.)

Groups	Correlation
Lowest	.13 plus
Median	(Minus) .07 plus
Highest	.14 plus

The correlation between the large groups is obvious but for the small groups there seems to be little or no correlation. Using the same data, but in the descending order of grades, there was still no correlation; table four.

TABLE IV.

Correlation of I.Q. and Average Grade

(In groups of 53, descending order of grades)

Group	Correlation
Highest	.29 plus
Median	.09 minus
Lowest	.04

This simply corroborates the facts in the groups of correlations in table three.

The lack of correlation suggested plotting the curve and we found the curves irregular, table five. Since this is true we cannot expect a higher co-efficient of correlation. However if all are taken together, and all cases included, the distribution would be more nearly normal, thus justifying the correlation of .557.

TABLE V

Distribution of I. Qs.

I.Q.	Cases	Number.
70-74	xxxxx	5
75-79	xxxxxxxxxxxxx	14
80-	xxxxxxxxxxxxxxxxxxxxxxx	24
85-	xx	2
90-		0
95-	xxx	3
100-	xxxx	4
105-	xxxxxxxxxxxxxxxxxxxxxxxxxxx (median)	28
110-	xxxxxxxxxxxxxxxxxxxxxxxxxxxx	30
115-	xxxx	4
120-	xx	2
125-	xxxx	4
130-	xxxxxxxxxxxxxxxxxxxxx	23
135-	xxxxxxxxxx	10
140-		0
145-	xx	2
150-	xx	2
155-	x	1
160-	x	1
Total	159	

DISTRIBUTION OF I.Qs.

The distribution of intelligence quotients in table five are marked in groups of five, the first group from seventy to seventy four, contains five cases; the second, seventy five to seventy nine, contains fourteen cases; the third, eighty to eighty four, etcetera.

In table six, the distribution of intelligence quotients is worked out in groups of ten. From seventy nine there are nineteen cases, eighty to eighty nine, twenty six cases et cetera. In this group the median intelligence quotient is found to be one hundred nine, the lowest intelligence quotient, seventy, the highest one hundred sixty nine, making a difference of forty three between the first and the fourth, and a difference of eighty one between the lowest and the highest; table seven.

TABLE VI.

I. Q.	Cases
70-79	19
80-89	26
90-	3
100-	32
110-	34
120-	6
130-	33
140-	2
150-	3
160-	1
	169

TABLE VII.

Median I. Q.	109
Quartrile I	84
Quartrile IV	127
Lowest I. Q.	70
Highest I. Q.	161.

LETTER GRADES.

For the sake of convenience in describing the students a letter grade was assigned in terms of their intelligence quotient and grades plus the classification of their advisers. The per cent of letter grades was found in thirds of students according to intelligence. In group A, ninety four per cent were in the highest third and six percent in lowest. In group B, seventy five per cent were in the highest group, twenty five in the median group. In the C plus groups seven per cent were in the highest, eighty eight in the median and five in the lowest third. In group C, one hundred per cent came in the lowest third, in Group D, two per cent in the highest, none in the middle third and ninety eight in the lowest. This demonstrates some correlation between teacher's grades and intelligence tests. The mental test results of the individual students are generally unknown to their class teachers. None of the students rated A, or B, or in the first and second section, fall in the lowest third. Those in the third section plus, the C plus group, come largely in the median group, a larger per cent in the upper than in the lower. The C and C minus grades fall

entirely in the lowest third, as do the D grades, with the exception of two per cent which surprisingly falls in the highest third, table eight.

TABLE VIII.

Letter Grade	Highest Third	Middle Third	Lowest Third
A	94%	6%	
B	75%	25%	
C+	7%	88%	5%
C-			100%
D	2%		98%

The two per cent in the highest third in the D group was found to be comprised of students of foreign birth with a very inadequate knowledge of the English language. This handicap of course prevented them from passing in the general knowledge of the tests, while by intensive study they were able to learn their daily lessons in a language almost foreign to them and thus attain high scholarship grades. It is quite apparent that the letter rating correlates closely with the intelligence quotient.

SCHOLARSHIP ACCORDING TO I. Qs.

By dividing the students into three groups according to intelligence quotients, the highest third was one hundred per cent, in the middle eighty eight and in the lowest eighty six per cent. In the highest group the median scholarship was eighty six, the median scholarship in the middle third was seventy seven and in the lowest, seventy five. While in the lowest scholarship group the highest was sixty eight, the middle third, sixty and in the lowest third, sixty. There was a difference of forty between the highest third of the highest group and the lowest third of the lowest scholarship group. The highest third of the median scholarship is four points lower than the lowest third of the highest group, while the lowest third of the median scholarship is seven points higher than the highest of the lowest group; table nine.

TABLE IX.

Scholarship by Thirds of Students,
According to Intelligence Quotients.

	Highest Third	Middle Third	Lowest Third
Median Scholarship	82	77	75
Lowest Scholarship	68	60	60
Highest Scholarship	100	88	86

There is evidently a greater variation between those in the highest and middle than between the middle and the lowest.

ASSIGNED RATINGS AND I. Qs. COMPARED.

The intelligence quotients were listed according to assigned ratings, median intelligence quotient, highest intelligence quotient and the lowest compared. The median intelligence quotient of each group was lower than the group above; as in group A, median intelligence quotient was 132.5; in group B 116.5 et cetera. In the same order, however, in the highest intelligence quotient

grouping, the highest in the D group, was thirty higher than that of the C group, also higher than the C plus and B group. In the list of lowest intelligence quotients, they also were in the descending order, as were the assigned ratings, with the exception of the case of the A and B group. The lowest intelligence quotient in the A group was 107 while in the B group it was 110; table ten.

TABLE X

Assigned Rating	Median I.Q.	Highest I.Q.	Lowest I.Q.	Number of cases.
A	132.5	161	107	48
B	116.5	123	112	4
C+	109	114	96	56
C	100	103	95	5
C-	89			1
D	80	133	70	45

SCHOLARSHIP AND ASSIGNED RATING COMPARED.

The same group were put together with reference to scholarship according to assigned rating. The highest grade was one hundred, in group A, while the lowest was

sixty eight, which is seven points lower than the highest grade in group B. The highest grade in group B is two points higher than the median grade in A. The highest grade in the C plus grade is greater than the highest grade in the B group, as is the highest grade in the C group. The median grade in C plus and C groups are the same, and the median grade of C minus is greater than the median grade of both C plus and C. The lowest grade in the D group is equal to the lowest grade in the C plus group, table eleven.

TABLE XI.

Scholarship According to Assigned Ratings.

Assigned Rating	Median Grade	Highest Grade	Lowest Grade	Number of cases.
A	82.5	100	68	48
B	78	80	75	4
C+	77	88	60	56
C	77	81	76	5
C-	80			1
D	77	100	60	45
Entire group	77	100	60	159

From the two preceding tables we see that the scholarship does not agree with the assigned rating as well as the intelligence quotient does. This is probably

due to the fact that grades are given by teachers who must necessarily be influenced by personality, while the intelligence quotients, agreeing with the assigned ratings, are more representative of the students' actual capacity.

In table eleven which is a comparison of intelligence quotients and grades, there is a correlation between the assigned ratings and the intelligence quotients with the exception of one or two unusual cases.

ATTENDANCE AND GRADES.

The matter of attendance and its correlation with teacher's grades and intelligence quotients is still a question. We are not endeavoring to bring a final conclusion on that subject for it necessarily varies according to the conditions of different schools, home environment and the economic condition of the students.

I. Qs. AND ATTENDANCE.

The one hundred fifty nine cases were segregated into three groups according to intelligence quotients, highest third, middle third and lowest third. The median

number of absences in each group were about the same, the lowest number of absences in each group was zero, while the greatest number of absences occured in the highest third, fewer in the middle group and then a greater number again in the lowest third; table twelve. Is it possible that those in the middle group have better health? Or is it that those in the upper group feel less in the need of attending school, while those in the lowest group find it irksome?

TABLE XII (a)

Attendance by Thirds of Students Group according to I. Qs.

	Highest Third	Middle Third	Lowest Third
Median Number of absences	1.5	2.0	2.75
Lowest Number of absences	0	0	0
Greatest Number of absences	59.25	21.5	33.75

Owing to the fact that one case, that of 59.25 absences was rather exceptional, it seemed advisable to omit the highest number of each group to see if there was any difference in the results; table twelve, b.

TABLE XII (b)

	Highest Third	Middle Third	Lowest Third.
Median number of absences	1.5	2.25	2.5
Lowest Number	0	0	0
Greatest Number	34.75	30.5	32.5

The results are practically the same as those of table twelve (a). The median number of absences show a slight variation of twenty five hundredths in the middle and last group. The lowest number of absences still is zero, while the greatest median number of absences continues to be the highest, in the highest third, almost as high in the lowest third, while the greatest number of absences is the least in the middle third. This substantiates the statement previously made that children of mediocre ability are more regular in attendance because of their recognition of the fact that they gain by regular attendance, those in the A group find it unnecessary and those of the third group find it irksome. So those highest in intelligence tend to have the greatest number of absences, especially since the case of the greatest number of absences, fifty nine, was exceptional,

that of a student of extremely poor health but good mental rating. There is not, however, enough difference to make a definite conclusion, but it indicates that low intelligence tends toward irregular attendance.

ABSENCE AND ASSIGNED GRADES.

In tabulating the days of absence according to assigned grades, the median number of absences in the upper group was 1.5, in the median group it was 2.5 and in the lowest third 2.5. The greatest number of absences in the highest intelligence quotient group was 34.75, omitting the case of 59.25 absences, in the middle group it was 21.5 and in the lowest 35.75; table thirteen.

TABLE XIII.

Days of absence according to Assigned Grades.

Assigned grades	Median Number Absences	Greatest Number	Least Number	Number of Cases.
Highest Third	1.5	(59.75 or 34.75	0	52 or 53
Middle Third	2.5	21.5	0	53
Lowest Third	2.5	35.75	0	53

This data confirms the fact again that the middle

group realize their deficiencies and attend regularly; the upper find it not so necessary to attend regularly to retain high standards; the lowest group find it irksome. The lowest number of absences was zero in each group.

I. Q., SCHOLARSHIP AND MEDIAN DAYS OF ABSENCE.

The intelligence quotient and scholarship were tabulated in such a way, as to show the median of days absent from each group, table fourteen. The cases were grouped according to scholarship, in sections of five points from one hundred to sixty. Each of these sections was divided into thirds according to intelligence quotients, highest third, median and lowest third. Then the median days of absence of each group was determined. There was but one case of 100% scholarship, found in the highest intelligence group with no absences. There were no cases in the 95-99 group. The 90-94 group the median days of absence was 6.265. This was in the highest intelligence quotient group which contained only two cases. In the 85-89 group the median days of absence is 11.180. This group had sixteen cases. In the middle third the

median of days of absence was 1.5, with five cases. The median in the lowest third was zero, with two cases considered, 4 cases. It is impossible to establish a definite conclusion from table fourteen.

TABLE XIV.

Table by I. Q. and Scholarship showing the median of days of absence for each group.

(-) The number of cases.

I. Q. Groups.

Scholarship	Highest Third	Middle Third	Lowest Third
100	$0_{(1)}$		
95-99	$0.625_{(2)}$		
90-94	$1.125_{(6)}$	$1.5_{(5)}$	
85-89	$1.5_{(10)}$	$1.25_{(12)}$	$0_{(2)}$
80-84	$0.5_{(15)}$	$2.0_{(23)}$	$3.75_{(7)}$
75-79	$1.25_{(8)}$	$2.75_{(3)}$	$3.0_{(30)}$
70-74	$1.0_{(1)}$	$1.0_{(3)}$	$1.75_{(12)}$
65-69		$11.125_{(2)}$	$2.5_{(5)}$
60-64			$1.125_{(4)}$

DIFFERENCE BETWEEN I. Q. AND SCHOLARSHIP,
WITH MEDIAN DAYS OF ABSENCE.

When the case material has tabulated in groups of ten, according to the differences between the intelligence quotient and scholarship, the greatest difference being seventy-nine and the lowest a negative nine. They were divided into three intelligence quotient groups and the median days of absence noted for each group. In the highest difference group, there were two cases, the median days of absence noted 2.55; there were none in the middle and lowest third. In the 80-89 group, seven cases were in the highest third, the median days of absence were 1.35, again we find no cases in the middle and lowest third. In the 60-69 group, seventeen cases were in the highest third, median 1.5 with no cases in the other two sections. In the 40-49 group were eighteen cases in the highest third, with a median of 2.25, seven cases in the middle third, median 2.5 and no cases in the third group. For the first time we have cases in each group in the 30-39 difference section. The greatest number of cases begins to appear in the central group, diminishes and finally disappears until all the cases are in the third group.

From this we reach a conclusion similar to a previous one, that in cases of the bright students the difference between scholarship and intelligence quotient had little effect on attendance. The student with high intelligence quotient and good grades pays little attention to attendance. The student making grades about equal to intelligence quotient was regular in attendance while the student whose intelligence quotient and scholarship both are low, gets discouraged and irregular in attendance as a result, table fifteen.

Table XV.

Table by I. Q. groups and Difference between I. Q. and Scholarship; with Median Days of Absence noted for Groups.

(-) Number of Cases.

Difference between I. Q. and Scholarship	I. Q. Groups Median Days of Absence.		
	Highest Third	Middle Third	Lowest Third
70-79	3.375(2)		
60-69	1.25(7)		
50-59	1.5(18)		
40-49	2.25(18)	2.5(7)	
30-39	3.5(9)	2.0(29)	2.0(2)
20-29		1.5(15)	7.375(8)
10-19		2.125(2)	7.5(11)
0-9			1.7(27)
minus 0-0			3.0(7)

CAPACITY AND EFFORT COMPARED.

Only seven of the entire group are working above

their intelligence quotient and the greatest of these is only four points higher than the capacity granted by their mental measurement. Twenty-seven are breaking even, the difference between the intelligence quotient and class grades ranging from zero to nine, showing they are practically working up to their fullest capacity. The greatest number of students, forty, in any one group of differences falls in the thirty to forty class; the median group. The least number is in the highest group, seventy to seventy nine, where we have only two students. There seems to be a gradual diminishing of the number of students in both directions with the exception of the next to the lowest group, zero to ten, where the number is able to hold their own increases.

The exceptional cases of low intelligence quotients and high grades who responsible for the deviations in order, but owing to the nature of these cases, as has been explained previously, they may be dropped entirely.

EFFECT OF ABSENCE ON SCHOLARSHIP.

The conclusion points to the fact that there is little if any effect of absence upon scholarship. But

a student with a high intelligence quotient is irregular in attendance, while the medium student seems to realize his short comings and attends regularly, those of low [illegible] and irregular records are irksome tasks.

PERSONAL OBSERVATIONS.

As we are personally acquainted in the High School in which the study was made we would suggest the following additional observations:

(1) The student of high school age is stronger physically than the student of grammar school age.

(2) It is evident that the older the student, the less the correlation between health and school work.

(3) That difference there is, is taken care of by the Physical Education Department. That department undertakes corrective gymnasium, gives advice on the subject of health, hygiene, proper conditions for studying and co-operates with the advice of the students in the preparation of the individual study programs.

(4) The administration and school counsellor co-operate with the pupils and parents effectively in not per-

mitting the students to overdo and in placing them in classes where they can readily adapt their capacities.

(5) The absence is carefully noted and co-operation on the part of the teacher makes it possible for the student to make up work, whether the absence is due to truancy or illness.

(6) Unnecessary absence is largely avoided by the administration and an efficient attendance officer. Some years ago, the lack of effect of absence upon the pupil's scholarship grades might have been said to have been due to the teacher's carelessness and laxity in grading, but now it cannot be fudged so because of the close and active co-operation of the forces mentioned.

SUMMARY.

Summarizing to draw the conclusions:

(1) The earned grades and intelligence quotients correspond better than the intelligence quotients and teacher's ratings.

(2) The teacher's grades and intelligence quotients correlate, but it is not a very high correlation.

(3) The attendance becomes more regular as we go from high to median intelligence quotient, and more irregular as we go from median to low intelligence quotient.

(4) Attendance is most irregular in the case of students whose grades are considerably lower than intelligence quotients.

(5) For the bright student, discrepancies between grades and intelligence quotients have little or no effect upon attendance.

(6) None of the conclusions have high enough statistical probability to be considered as having any extraordinary influence upon attendance regulations and the grading system.

SUGGESTIONS.

Although practically all of our schools keep attendance records with accuracy, the detailed account of attendance histories,, reasons for absence, the cause of leaving school, et cetera, would do much in securing more specific results in a study of this sort and be of value to the administration of the individual school, as well

as the educational system as a whole. Data for individual cases is hard to secure, especially if some time has elapsed since the case occured. This is being recognized in general and the tendancy is to secure an accurate detailed record of the attendance history of the individual. We need not only the mental rating, the daily grades, the attendance record of the student, but a more detailed personal history record, accurately kept in conjunction with them.

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DATA USED IN THIS STUDY.

In listing the data used in this study we have six columns:

1. The number of the student assigned for identification.
2. The group rating or letter grade which was found in terms of the intelligence quotient and grades plus the classification of the advisors.
3. The intelligence quotient.
4. The students class grade expressed in the same terms as the intelligence quotient.
5. The difference between the intelligence quotient and the class grades.
6. The number of days absent.

The last mentioned is carried out to two decimal places because of the consideration of the fractional part of days absent.

Student	Group Rating	I.A.	Grade	Difference	Days Absent
101	A	155	80	75	.25
145	A	161	86	75	10.5
168	A	138	77	61	0
131	A	148	87	61	.75
54	A	130	68	62	1.
62	A	147	82	65	1.25
105	A	150	85	65	1.5
94	A	135	74	61	1.5
124	A	138	76	62	6.5
125	A	152	100	52	0.
126	A	135	78	57	0.
90	A	134	80	54	0.
150	A	139	86	53	.5
107	A	134	70	54	1.
108	A	139	82	57	1.
117	A	137	80	57	1.5
110	A	131	75	56	1.5
25	A	132	82	50	2.
118	A	132	82	50	3.5
149	A	131	77	54	5.

Student	Group Rating	I. Q.	Grade	Difference	Days Absent
116	A	135	77	58	5.75
169	A	137	78	59	7.35
45	A	131	77	54	19.25
19	A	135	78	57	32.
54	A	127	75	52	34.75
148	A	134	87	47	0.
8	A	130	87	43	0.
107	A	130	83	47	.25
128	A	130	88	42	.25
119	A	130	88	42	.25
47	A	130	87	43	.5
150	A	133	86	47	.5
11	A	133	84	49	.5
137	A	131	85	46	1.5
96	A	125	85	40	3.
67	A	130	84	46	3.25
55	A	132	89	43	4.5
12	A	126	82	44	6.
164	A	133	90	43	6.25
154	A	131	90	41	7.
60	A	125	84	41	13.

Student	Group Rating	I. Q.	Grade	Difference	Days Absent
34	A	132	85	47	20.
50	B	123	75	48	29.75
108	B	116	80	36	1.5
109	A	124	89	35	3.5
157	A	116	79	37	9.
85	A	118	85	33.3	13.
61	B	117	78	39	59.5
146	A	112	83	29	12.75
93	B	110	78	32	19.25
10	A	107	78	29	20.5
64	C plus	114	75	39	2.5
36	C plus	114	80	34	3.
100	C "	114	80	34	4.5
27	C "	114	82	32	.5
24	C "	105	73	32	4.
1[illegible]	C "	96	7[illegible]	16	32.5
92	C "	104	74	30	[illegible].
44	C	95	76	19	[illegible].25
121	C	103	77	26	7.
76	C	100	77	23	24.75
56	C plus	110	80	30	0.

tudent	Group Rating	I.Q.	Grade	ifference	Days bsent
15	C plus	110	87	23	1.5
125	C "	112	85	27	3.
42	C "	106	87	19	3.25
66	C "	105	74	31	.25
41	C "	111	74	37	2.5
20	C "	114	73	41	2.5
19	C "	112	72	40	2.75
112	C "	108	78	30	3.
51	C "	106	73	33	4.
53	C "	106	74	32	5.25
83	C "	105	70	35	7.25
13	C "	109	77	32	0.
38	C "	113	77	36	0.
63	C "	105	75	30	0.
80	C "	110	75	35	0.
33	C "	107	78	29	0.
104	C "	106	77	29	.25
48	C "	112	77	35	.75
120	C "	107	75	32	.75
56	C "	112	78	34	1.
65	C "	106	75	31	1.

tudent	Group Rating	I. Q.	Grade	Difference	Days Absent
60	[illegible]	113	79	34	1.75
7	C plus	109	76	33	2.
58	C plus	110	77	33	2.5
31	C "	112	78	34	2.75
82	C "	112	76	36	3.
73	C "	113	77	36	3.
17	C "	109	75	34	5.
74	C "	112	75	37	5.
114	C "	111	75	36	6.
87	C "	108	77	31	6.
23	C "	113	75	38	13.75
57	C "	108	60	48	.75
103	C "	110	61	49	21.5
30	C "	109	68	41	.75
95	C "	111	67	44	1.
69	C "	112	65	47	2.5
26	C "	112	80	32	0.
72	C "	108	84	24	0.
111	C "	110	82	28	0.
32	C "	107	81	26	0.
16	C "	108	80	28	0.

Student	Prog. Rating	I.Q.	Grade	Difference	Days Absent
113	C plus	112	81	31	.5
97	C "	109	81	28	3.5
14	C "	105	82	23	4.5
155	C "	107	80	27	3.75
72	C "	109	80	29	4.
37	C "	105	85	20	1.
35	C "	107	88	19	1.
4	A	133	76	57	8.
77	B	84	85	-1	5.
144	B	84	86	-2	7.
79	B	78	80	-2	0.
52	B	78	83	5	1.
127	B	76	80	-4	1.75
134	B	76	80	-4	3.75
130	C	96	81	15	7.5
139	C	103	80	23	7.75
48	C-	89	80	9	1.5
159	D	80	77	73	0.
83	D	82	77	5	0.
40	D	80	75	5	0.
21	D	77.5	76	1.5	.5

tudent	Group ating	I.Q.	Grades	ifference	ays bsent
82	[illegible]	84	77	7	.5
167	[illegible]	80	77	3	1.5
49	[illegible]	82	75	7	1.75
129	[illegible]	84	78	6	1.75
9	[illegible]	78	75	3	2.5
143	[illegible]	77.5	75	2.5	3.
141	[illegible]	81	76	5	3.
136	[illegible]	82.5	77.5	5.0	3.
43	[illegible]	84	75	9	3.5
102	[illegible]	81	75	6	4.
70	[illegible]	84	76	8	11.
106	[illegible]	79	77	2	11.5
163	[illegible]	78	70	8	0.
28	[illegible]	81	70	11	.75
29	[illegible]	74	72	2	.75
135	[illegible]	79	73	6	1.5
99	[illegible]	78.5	71.4	7.1	1.5
133	[illegible]	70	70	--	1.5
91	[illegible]	79	70	9	1.75
153	[illegible]	80	74	6	2.5
121	[illegible]	81	70	11	3.75

tudent	Group ating	I . Q.	G rade	Difference	Days absent
138	D	71	70	1	5.
152	D	78	74	-4	6.
1	D	84	60	24	20.75
132	D	72	75	-3	6.5
140	D	86	73	13	13.
59	D	82	67	15	6.
162	D	77	68	9	4.5
147	D	83	67	16	8.75
151	D	84	68	16	14.75
160	D	84	68	16	33.75
78	D	70	63	7	0.
75	D	83	63	20	.75
91	D	84	63	21	1.5

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